PRODUCT INFORMATION

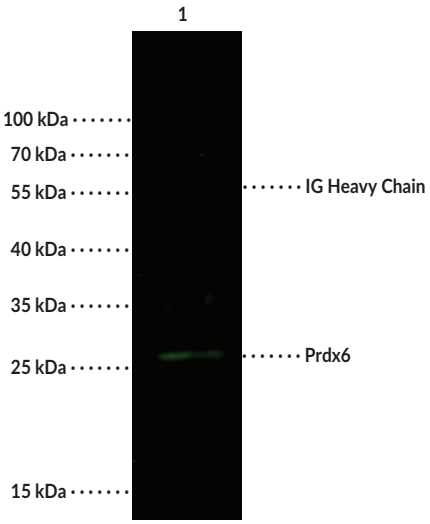
Peroxiredoxin-6 Monoclonal Antibody (Clone 03)

Item No. 43212

Overview and Properties

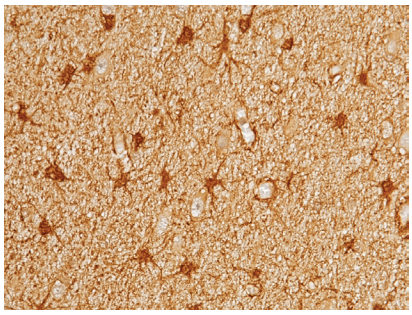
Contents:	This vial contains 100 µl of protein A-purified monoclonal antibody.
Synonyms:	aiPLA$_2$, Acidic Calcium-independent Phospholipase A$_2$, 1-Cys Peroxiredoxin, Glutathione-dependent Peroxiredoxin, LPCAT5, Non-selenium Glutathione Peroxidase, NSGPx, Prx6
Immunogen:	Recombinant human Prx6
Cross Reactivity:	(+) Prx6, (-) *E. coli* cell lysate
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-80°C (as supplied)
Stability:	≥1 year
Storage Buffer:	0.2 µm filtered solution in PBS, with 10% trehalose, pH 7.0
Clone:	03
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Immunohistochemistry-paraffin (IHC-P), Immunoprecipitation (IP); the recommended starting dilution is 1:1,000-1:2,000 for ELISA and 1:50-1:200 for IHC-P; the recommended starting concentration is 4-6 µl/mg of lysate for IP. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: 0.5 mg Hela whole cell lysate, 2 µl Peroxiredoxin-6 Monoclonal Antibody, and 15 µl of 50% Protein G agarose.

Prdx6 was immunoprecipitated using Peroxiredoxin-6 Monoclonal Antibody at a dilution of 1:500 followed by Dylight 800-labeled antibody to Mouse IgG (H+L) at a dilution of 1:7,500. It has an observed band size of 26 kDa under reducing conditions.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human Prdx6 in human brain using Peroxiredoxin-6 Monoclonal Antibody at a dilution of 1:60.

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Description

Peroxiredoxin-6 (Prx6) is a 1-Cys-containing Prx that is involved in the maintenance of cellular thiol redox homeostasis and phospholipid metabolism.[1] It exists as a homodimer and is composed of a thioredoxin fold-containing catalytic domain, which contains a peroxidatic cysteine (Cp), and a C-terminal arm.[2] Unlike 2-Cys-containing Prxs, Prx6 does not contain a resolving cysteine (Cr) and uses glutathione (GSH) instead. Prx6 is ubiquitously expressed and localizes to the cytosol, nucleus, mitochondria, and plasma membrane.[1,3] It has three enzymatic activities: glutathione peroxidase (GPX), acidic calcium-independent phospholipase A_2 (aiPLA_2), and lysophosphatidylcholine acyltransferase (LPCAT).[1,4,5] The LPCAT activity, which selectively uses palmitoyl-CoA as a substrate, is coupled to the aiPLA_2 activity and is selective for lysophosphatidylcholine over lysophosphatidylethanolamine, lysophosphatidylglycerol, lysophosphatidylinositol, and lysophosphatidylserine.[5] These activities, coupled with the GPX activity, provide Prx6 the ability to repair oxidized cell membranes.[1] Prx6 is also involved in the activation of NADPH oxidase 2 (NOX2). Tumor levels of Prx6 are increased in patients with non-small cell lung cancer (NSCLC) and serum levels of Prx6 are decreased in patients with asthma.[6] Cayman's Peroxiredoxin-6 Monoclonal Antibody (Clone 03) can be used for ELISA, immunohistochemistry-paraffin (IHC-P), and immunoprecipitation (IP) applications.

References

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2. Choi, H.J., Kang, S.W., Yang, C.H., *et al.* Crystal structure of a novel human peroxidase enzyme at 2.0 A resolution. *Nat. Struct. Biol.* **5(5)**, 400-406 (1998).
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4. Chen, J.W., Dodia, C., Feinstein, S.I., *et al.* 1-Cys peroxiredoxin, a bifunctional enzyme with glutathione peroxidase and phospholipase A_2 activities. *J. Biol. Chem.* **275(37)**, 28421-28427 (2000).
5. Fisher, A.B., Dodia, C., Sorokina, E.M., *et al.* A novel lysophosphatidylcholine acyl transferase activity is expressed by peroxiredoxin 6. *J. Lipid Res.* **57(4)**, 587-596 (2016).
6. Jia, W., Dong, C., and Li, B. Anti-oxidant and pro-oxidant effects of peroxiredoxin 6: A potential target in respiratory diseases. *Cells* **12(1)**, 181 (2023).

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